

Traditional Bone Setters and Their Relevance in the Present-Day Orthopaedic Care - A Manipur Experience

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ABSTRACT

Background: Traditional bone setters (TBSs) occupy an important role in the management of musculoskeletal injuries in the societies of many developing countries and Manipur society is no exception to this. This study was conducted to evaluate the reasons for patronising TBSs and their relevance in modern society. **Methods:** An observational cross-sectional study was conducted during 2015-17 in a teaching medical college in Imphal, Manipur. Patients with fractures and dislocations attending the orthopaedic department after 'treatment' by TBSs were included in this study. They were evaluated clinically and radiologically for presence or absence of any complication. Appropriate treatment was provided to all the patients according to the hospital protocol. **Results:** There were 302 males and 150 females with maximum number of patients belonging to the age group 1-20 yrs. There were 320 closed fractures, 90 compound/open fractures and 42 dislocation cases. Upper limb was involved in 290 patients, lower limb in 110 patients and axial bones in 52 patients. Most of the patients were educated and most of them had a firm belief in traditional bone setting (TBS) system. Mal-union was the most common complication (53%) which was followed by non-union (13.2%). **Conclusion:** In spite of availability of state of the art modern orthopaedic care facilities in Imphal, Manipur the general population still used to continue to patronize TBS for any musculoskeletal injury as they have an age-old firm belief in this system of treatment (46.5%). Easy availability and affordability made their service all the more attractive to the people (23.5%). Educational status of the patient had no role in patronizing TBS. Perhaps it is high time the TBS are imparted basic training on bone and joint care in order to minimise the associated complications, in the line of training "dais" to "trained birth attendants".

Keywords: Fractures, Mal-union, Traditional bone setters.

INTRODUCTION

In spite of advancements in the field of modern orthopaedic science, the practice of Traditional bone setting (TBS) goes un-abetted throughout the societies of many countries. Traditional bone setters (TBSs) are one of the largest specialist groups practising traditional medicine in India.^[1] Their preference over modern orthopaedics care by the patients may be explained by affordability, availability, fear of surgery and custom. The general mindset in Manipuri society is that, any injury of a limb or a joint is due to shifting of bones away from each other and the treatment is putting them back to their original position, which is best

performed by TBSs or so called "Maiba" in local dialect. It is also true that many fractures do heal with the traditional methods of treatment.^[2] Traditional bone services are well preserved as family practice and training is by apprenticeship. Records are kept strictly by oral tradition.^[3] The principle and common mode of immobilisation is application of a tight splint at the fracture site.^[2] The immobilisation is done most of the time without basic knowledge of anatomy, physiology and radiology, which make life and limb-threatening complications inevitable. The complications vary from acute compartment syndrome, tetanus, deformities, chronic osteomyelitis, gangrene, amputation and death.^[4,5] These complications do not seem to deter the patients from patronising the TBS, rather this practice continues to flourish.^[6] In Imphal which is the capital city of Manipur state, TBSs (Maibas) continue to flourish in spite of availability of state of the art orthopaedics care facilities. Studies regarding TBS are available mostly from the African countries and some states from the

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mainland of India, but are hardly available from the north-eastern of the country.

Objectives:

The present study was conducted to ascertain the type of complications of traditional bone setting and also to explore the factors that contributed to continued prevalence of TBS thereby compelling the patients to continue thronging to these TBSs.

MATERIALS AND METHODS

An observational cross-sectional study was conducted during the period of March 2015 to March 2017 in the Department of Orthopaedics, Jawaharlal Nehru Institute of Medical Sciences, Imphal, Manipur. All patients attending orthopaedic OPD or emergency services of JNIMS during this two years' study period after initial manipulation by TBSs were included in this study. Patients with fractures or dislocations coming directly to the hospital were excluded from the study. Patients with associated spinal, abdominal, thoracic and intracranial injuries were also excluded from the study.

After obtaining verbal informed consent, data were collected by using a semi-structured interview schedule. Socio-demographic backgrounds of the patients were collected. After it, observations were made of the methods and materials used in reduction and immobilisation of the fractures by the TBSs, presence of complications like blisters or ulcers, mal-union, non-union, ischaemic contractures, gangrene or any other complications. Note was also made of the patient and family members' level of satisfaction with the treatment provided by the TBSs. The patients were also enquired about the details of their contacts who guided them to the TBS and reasons for going to TBS instead of modern doctor. Finally, all the patients were examined clinically and radiologically for fractures or dislocations and resultant complications due to treatment by the TBSs. Appropriate conservative or operative treatments were then provided to all the patients as per the existing hospital protocol.

Data collected were entered and analyzed by using SPSSv22. Only descriptive statistics like mean and proportions were used for data presentation.

RESULTS

Completed data sets could be collected from a total of 452 patients. This comprised of 330 males (66.8%) and 122 females (33.2%) having fractures and/or dislocations (290 upper limb, 110 lower limb and 52 axial bones). Maximum patients were from the age group of 1-20 years numbering 280 (62%). Majority of the patients (300; 66.3%) were under-graduates and 90 patients were post

graduates (20%). There were 320 cases of closed fractures, 90 cases of open fractures and 42 dislocations. The main reasons for availing the service of traditional bone setters were socio-cultural belief (46.5%), easy affordability (23.5%), influence by relatives/friends (18%) and fear of surgery (12%). [Table 1]

Table 1: Distribution of study-subjects by background characteristics and type of injury (n=452)

Background characteristics	Number	Percentage
Age (in yrs)		
• 1-20	280	62%
• 20-40	100	22%
• 40-60	50	11%
• 60 & above	22	5%
Gender		
• Male	302	66.8%
• Female	150	33.2%
Educational Status		
• Illiterate/under matric	62	13.7%
• Undergraduate	300	66.3%
• Graduate and above	90	20%
Type of injury		
• Simple fracture	320	70.5%
• Compound fracture	90	20%
• Dislocation	42	9.5%
Site of Injury		
• Upper Limb	290	64%
• Lower limb	110	24.5%
• Axial (vertebrae/pelvis)	52	11.5%
Reasons for going to TBSs		
• Belief in TBS	210	46.5%
• Financial reasons	106	23.5%
• Influence of relatives/friends	82	18%
• Fear of surgery	54	12%

All the study-subjects were found to have at least a complication, either major or minor because of the TBS treatment. The most frequently observed complications were mal-union (240; 53%), soft tissue infection (64; 14.1%) and non-union (60; 13.2%). Other complications observed were neglected dislocation, ischaemic contracture, chronic osteomyelitis and gangrene. [Table 2]

Table 2: Complications due to TBS treatment (n=452).

Complication	Number	Percentage
Mal-union	240	53%
Non-union	60	13.2%
Ischaemic contracture	22	4.8%
Gangrene	10	2.2%
Neglected dislocation	42	9.2%
Soft tissue infection	64	14.1%
Chronic osteomyelitis	14	3%

DISCUSSION

Traditional Bone Setters (Maibas) still command attention of a good number of patients with musculoskeletal injuries in Manipur. The idea of TBS being the answer to all bone and joint injuries

is still well embedded in the psyche of society at large. In this study, majority of the patients were below 20 years of age and any functional impairment in this age-group directly affects the productivity of the society. The preponderance among this young age-group, as found out from the current study, is slightly different from earlier studies done by Manjunatha V et al in a southern state in India and studies done abroad by Odatuwa-Omagbuni DO et al, OlaOlorun DA et al and Onyemachi NOC et al in Nigeria where the mean age of the patients ranged from 30-50.^[7-10] Male preponderance as found out in the current study is comparable to all earlier findings from studies done everywhere. This suggests that young males are more adventurous and engage in injury prone activities. Educational status of the patients in this group suggests that even educated people still patronise the traditional bone setters. This study is in contradiction to the idea that poverty and illiteracy are the important causes that make the patients patronise the traditional bone setters in the common mass.^[11]

Mal-union (53%) was the most common complication in this series followed by soft tissue infection (14%). This finding is in accordance to all research publications available.^[7-9,11,12] Complications like gangrene, ischaemic contracture and neglected dislocations were also encountered, although there was no case of amputation in this study.

Most of the TBS use bamboo splints after application of a paste made of herbs or tree leaves over the fracture site. It was also observed during this study that the TBSs used to splint the injured part of the limb leaving the adjacent joints free to move.

It was also observed that generally people harbour a false assumption that a visit to an orthopaedic surgeon automatically means a surgical treatment which will lead to some complications. A rare complication following orthopaedic procedure that might have taken place long time back is taken as an example time and again. This phobic psychology encourages many limb injury cases to approach TBS for non surgical managements.^[14,15] Among various reasons for patronizing TBSs cited by the patients belief in TBS was the major reason followed by financial reasons. The various reasons as found out from the current study are more or less comparable with findings of studies done before elsewhere.^[7,10,12]

Here at this juncture, it is important to note that Dada AA et al from their review of existing published articles found that, training of the traditional bonesetters by the orthodox practitioners could lead to improvement in their performance.^[16] The exclusion of serious patients having comorbidity from the present study might have

slightly changed the estimates concerning the socio-demographic pattern and prevalence of the different types of the injuries and complications. But there is no specific reason to conclude that this would be a big issue in the current study finding.

CONCLUSION

Traditional bone setters will continue to exist in our society for some time to come. Education and social awareness among the general population is the need of the hour to avail the services of qualified health care provider in cases of bone and joint injuries and also highlight the disastrous outcome of treatment by untrained TBSs. This study conducted to evaluate the reasons for patronising the TBS and associated complications following treatment by TBSs threw up some important facts. It is the age-old belief on TBS and financial involvement in modern orthopaedic care that make the patients patronize the TBS and educational status of the patient has nothing to do with their preference of TBSs over modern orthopaedic care. Perhaps it is pertinent now to impart basic training on bone and joint care to these traditional bone setters in order to minimise the associated complications, in the line of training "dais" to become trained birth attendants.

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